Defense Sciences Office

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DARPA

Formed in 1958 to **PREVENT** and **CREATE** strategic surprise.

Capabilities, mission focused

Finite duration projects

Diverse performers

Multi-disciplinary approach...from
basic research to system engineering

Making pivotal early investments that change what's possible...

Defense Sciences Office

Who we are:

- A collaborative team of diverse, opportunistic technology entrepreneurs
- "DARPA's DARPA" – office that creates DoD opportunity from fundamental scientific discovery
- Informed, but not constrained, by current trends and conflicts

What we do:

- Invest in multiple, often disparate, scientific disciplines
- Reshape existing fields or create entirely new disciplines (sometimes when the payoff to DoD may not be fully understood)
- Harvest and accelerate the development of promising breakthroughs to create enabling technologies for broad impact against national security challenges

The Nation's first line of defense against scientific surprise

DARPA Technical Offices

BTO	DSO	I2O	MTO	STO	TTO
Biology, Technology & Complexity	Discover, Model, Design & Build	Information, Innovation & Cyber	Electronics, Photonics & MEMS	Networks, Cost Leverage & Adaptability	Weapons, Platforms & Space
Restore and Maintain Warfighter Abilities Harness Biological Systems Apply Biological Complexity at Scale	Physical Sciences Mathematics Transformative Materials Supervised Autonomy Novel Sensing and Detection Harnessing Complexity	Cyber Data Analysis at Massive Scales ISR Exploitation	Biological Platforms Computing Electronic Warfare Manufacturing Novel Concepts Photonics Positioning, Navigation and Timing Thermal Management	Battle Mgmt, Command & Control Comms & Networks ISR Electronic Warfare Positioning, Navigation and Timing	Air Systems Ground Systems Marine Systems Space Systems

Major Factors Shaping DARPA Investments Today

Wide range of national security challenges: evolving nation states, shifting networks

Powerful, globally available technologies set a fast pace

Military systems' cost, pace, and inflexibility limit our operational capabilities

National Security Challenges

- Wide range of national security challenges: evolving nation states, shifting networks
  - Can we counter the diversity of national security threats by rapidly accelerating scientific discovery and innovation?
  - Can reliable and timely detection and management of CBRNE materials and devices address WMD threats arising from the erosion of boundaries?
- Powerful, globally available technologies set at a fast pace
  - Can we speed the creation of new capabilities and remove technology barriers to rapid or low volume production?
- Military systems' cost, pace, and inflexibility limit our operational capabilities
  - Can we harness complexity and manage uncertainty/risk in the systems we build?

Bubbling Technology Opportunities

???

(Tell us what you think they are)

We look forward to your ideas.

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Program Managers

Fariba Fahroo
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Robotics

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Physics

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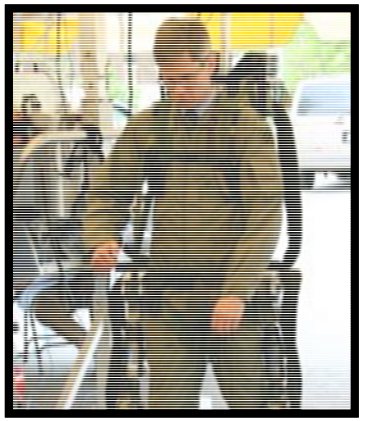
Quantum and Nonlinear Optics

Judah Goldwasser
Structural Materials

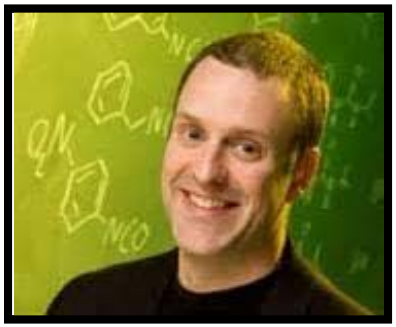
Doran Michels
Ground Combat Systems

Michael Maher
Materials and Manufacturing

Gill Pratt
Robotics and Neuromorphic Systems



John Main
Material System Innovation



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Applied Physics